Safety & Buildings Division
201 West Washington Ave.
P.O. Box 2658
Madison, WI 53701-2658

Approval # ***201108-I***
FN 20119008

Wisconsin
Building Product Evaluation

Material	MBCI ECO-FICIENT™ INSULATED METAL WALL & ROOF PANELS

Manufacturer	MBCI 14031 WEST HARDY HOUSTON, TEXAS 77060

SCOPE OF EVALUATION

The ECO-FICIENT Grand VW, Grand HW, Royal, Classic, Vintage, and Summit wall panels, the Insulated R Panel wall and roof panel, and the Insulated Battenlok roof panel were evaluated for compliance with the requirements of the current edition of the Wisconsin Commercial Building Code.

The ECO-FICIENT foam plastic sandwich panels were evaluated as insulated wall and roof panels in accordance with s. IBC 2603.9.

NOTE: The structural performance and thermal transmission properties of the panels are outside the scope of this evaluation and are subject to specific evaluation and approval by the code official having jurisdiction for the particular project.

DESCRIPTION AND USE

ECO-FICIENT wall and roof panels consist of two metal skins chemically bonded to a rigid foam insulation layer.

The HFC 245fa Voracor foam system consists of an A component (isocyanate) and a B component (polyol) which are mixed together to produce the foam cores.

ECO-FICIENT facers consist of a minimum 0.0170 inch (26 gauge) thick or 0.0225 inch (24 gauge) thick painted steel or (optional) stainless, galvanized or Galvalume steel facers with maximum 6 inch thick core of foamed polyurethane insulation. 22 gauge facers are also available. The panels are available in lengths up to 59 feet with standard widths up to 42 inches.

TESTS AND RESULTS

Factory Mutual Research conducted the full-scale, 50 foot room corner test (FM 4880) on the Insulated R Panel galvanized steel-faced wall/roof panel with the 6-inch thick polyurethane core. The panels meet the Factory Mutual Research requirements for a Class I fire rating and meet code requirements for use without a thermal barrier and without height restriction as exterior walls of combustible or non-combustible construction when installed as specified below.

Wall and ceiling panels are secured to purlins, girts or other framing members by one of these methods:

- From the interior with fasteners through the framing members into the interior panel facings, or
- With clips and self-drilling or self-tapping fasteners within the panel side laps, or
- The steel facings of the panels are positively secured to the foam core by securement of the entire panel assembly to supporting structural members with mechanical fasteners or positive securement of the interior facer to the exterior facer with mechanical fasteners.

Interior corner joints are covered with minimum 2.5-inch by 2.5-inch prefinished corner flashing secured to both panel facers with self-drilling screws or steel rivets at 12-inches on center.

Tests show 1) that the panels in and of themselves would not create a need for automatic sprinklers and 2) that the panels would be acceptable in a combustible occupancy protected by automatic sprinklers as defined by FM Global Loss Prevention Standards.

ASTM E-84 tests performed on a 4-inch thick sample showed a flame spread index of 15 and a smoke developed index of 75.

ASTM E-1929 tests showed self-ignition and flash-ignition temperatures of 880^{o} F.

FM 4471 tests resulted in I-75, I-90 and I-105 wind resistance classifications.

The tested constructions meet the FMRC approval criteria and are listed in the FMRC Approval Guide.

LIMITATIONS OF APPROVAL

Other chapters of the code not mentioned above may require an automatic sprinkler system based on limitations of occupancy, area, height, etc., or may specify height limitations.

ECO-FICIENT wall and roof/ceiling panels may be used in refrigerated warehouses and walk-in coolers subject to the requirements of ss. IBC 2603.4.1.2 and 2603.4.1.3.

Installation shall be in accordance with the Factory Mutual Research listings, the manufacturer's instructions and this evaluation. In the event of conflicts, the more strict requirements shall govern.

The insulated metal panels themselves do not constitute a fire-rated assembly.

The Wisconsin Building Product Evaluation Number must be provided when plans that include this product are submitted for review.

DISCLAIMER

The department is not endorsing or advertising this product. This approval addresses only the specified applications for the product and does not waive or modify any code requirement not specified in this document.

EXPIRATION

This approval will be valid through December 31, 2017, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the department.

Approval Date:

By: Duane Hubeler
Bureau of Integrated Services